

Title (en)
OPTICALLY VARIABLE SECURITY ELEMENT

Title (de)
OPTISCH VARIABLES SICHERHEITSELEMENT

Title (fr)
ÉLÉMENT DE SÉCURITÉ OPTIQUEMENT VARIABLE

Publication
EP 4178808 A1 20230517 (DE)

Application
EP 21737566 A 20210702

Priority
• DE 102020004091 A 20200707
• EP 2021025243 W 20210702

Abstract (en)
[origin: CA3184610A1] The invention relates to an optically variable security element (12) for safeguarding valuable objects, the surface area of said security element defining a z-axis perpendicular thereto, comprising a reflective surface region exhibiting at least two images (14-A, 14-B) which are discernible from different viewing directions. The reflective surface region contains two relief structures (24, 34) that are arranged at different vertical levels in the z-direction and form a lower-lying and a higher-lying relief structure, each of which is provided with a reflection-increasing coating (26, 36) that follows the course of the relief. The higher-lying relief structure (34) exhibits a first optically variable effect in a first color, and the lower-lying relief structure (24) can be viewed through the higher-lying reflection-increasing coating or through grid intermediate spaces (54) or recesses in the higher-lying reflection-increasing coating (36) and exhibits a second optically variable effect in a second different color. The security element is provided in an inner coating which is provided over the entire surface or in some regions (60) and comprises at least one machine-readable feature substance (62).

IPC 8 full level
B42D 25/305 (2014.01); **B42D 25/324** (2014.01); **B42D 25/328** (2014.01); **B42D 25/351** (2014.01); **B42D 25/36** (2014.01); **B42D 25/369** (2014.01); **B42D 25/373** (2014.01); **B42D 25/378** (2014.01); **B42D 25/382** (2014.01); **G06K 19/00** (2006.01)

CPC (source: EP US)
B42D 25/305 (2014.10 - EP US); **B42D 25/324** (2014.10 - EP US); **B42D 25/328** (2014.10 - EP US); **B42D 25/351** (2014.10 - EP US); **B42D 25/36** (2014.10 - EP); **B42D 25/369** (2014.10 - EP US); **B42D 25/373** (2014.10 - EP US); **B42D 25/378** (2013.01 - EP); **B42D 25/382** (2013.01 - EP US); **G06K 19/06046** (2013.01 - EP); **G06K 19/06065** (2013.01 - EP)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
DE 102020004091 A1 20220113; CA 3184610 A1 20220113; CN 115835966 A 20230321; EP 4178808 A1 20230517; US 2023249488 A1 20230810; WO 2022008098 A1 20220113

DOCDB simple family (application)
DE 102020004091 A 20200707; CA 3184610 A 20210702; CN 202180048043 A 20210702; EP 2021025243 W 20210702; EP 21737566 A 20210702; US 202118014559 A 20210702